



## Young Females At High Risk for Psych Symptoms after ARDS



Young, female ARDS survivors, who were unemployed prior to ICU admission, are at greatest risk of psychiatric symptoms following discharge. And it is not the sickest patients with the longest ICU stay who are most at risk, according to the results from a multicentre national U.S. study, led by Johns Hopkins University researchers and published in [Critical Care Medicine](#) (Huang et al. 2016).

ARDS survivors followed up at 6 and 12 months after discharge had high occurrences of psychiatric symptoms, with young females who were unemployed before hospital admission at highest risk of depression, anxiety and post-traumatic stress disorder (PTSD). Other associated markers for symptoms were alcohol misuse and greater in-ICU use of opioids. Greater severity of illness and ICU length of stay were not associated with psychiatric symptoms. Survivors who did experience psychiatric symptoms were more likely to suffer more than one symptom concurrently, however.

The study, by Minxuan Huang ScM, Ann M. Parker, MD, O. Joseph Bienvenu, MD, PhD, Victor D. Dinglas, MPH, Elizabeth Colantuoni, PhD, Ramona O. Hopkins, Ph and Dale M. Needham, FCPA, MD, PhD with the National Institutes of Health, National Heart, Lung, and Blood Institute Acute Respiratory Distress Syndrome Network is published in the May 2016 issue of [Critical Care Medicine](#).

### Results

629 ARDS survivors from 41 ARDS network hospitals in the U.S. completed at least one psychiatric measure over the 1 year telephone follow-up. Survivors were questioned about self-reported psychiatric symptoms using the Hospital Anxiety and Depression Scale and for PTSD the [Impact of Event Scale-Revised \(IES-R\)](#) at 6 and 12 months after discharge. The participants' mean age was 49; 52% were female, 82% were white, and 49% unemployed prior to admission.

#### At 6 months:

- 24% had signs of PTSD
- 36% had signs of depression
- 42% had signs of anxiety

#### At 12 months:

- 23% had signs of PTSD

- 36% had signs of depression
- 42% had signs of anxiety

The most common pattern of co-occurrence was having symptoms of all three psychiatric domains simultaneously. Over half of the patients (57-66%) who had substantial symptoms of depression, anxiety and PTSD at 6 months, still experienced the same symptoms at 12 months. A minority of patients without symptoms at 6 months developed symptoms later (less than 15%).

Other studies of patients with acute lung injury have found that most patients with psychiatric symptoms after critical illness did seek treatment. [Joe Bienvenu, MD](#), associate professor of Psychiatry and Behavioral Sciences at Johns Hopkins, in an email to *ICU Management & Practice*, noted that a 2-year longitudinal study found that of those who had supra-threshold symptoms in anxiety, depression or post-traumatic stress disorder, 58% reported taking psychiatric medications and 47% reported receiving specialist mental healthcare (Bienvenu et al. 2015). Bienvenu added that PTSD may be particularly strongly associated with seeking treatment. Looking specifically at PTSD after acute lung injury Bienvenu and colleagues found that 50% of the patients with clinically significant PTSD symptoms were taking psychiatric medications and 40% had seen a psychiatrist (slightly more, 44%, had seen any kind of mental health specialist) (Bienvenu et al. 2013).

## Recommendations

The authors suggest that when accounting for pre-ICU psychiatric symptoms, critical illness may still be an independent risk factor for anxiety and depression, and is likely to be the cause of PTSD symptoms, as the IES-R instrument addresses patients' symptoms in relation to their critical illness and ICU experience. They note that as this study found that risk factors for post-ICU physical impairment were not associated with worse symptoms, their findings have value in identifying patients at greatest risk of psychiatric symptoms during recovery from critical illness. "Our findings add to the growing body of evidence that psychiatric symptoms are a significant and prolonged burden for ICU survivors and that patient and critical illness factors may be markers for these symptoms," they write.

Lead author Minxuan Huang, ScM, biostatistician in the Division of Pulmonary and Critical Care Medicine at the Johns Hopkins University School of Medicine, said the key points are that the focus should NOT exclusively be on older or sicker patients, or on those who have been in the ICU the longest. Additionally, given the frequent co-occurrence of psychiatric symptoms, care providers should simultaneously evaluate for a full spectrum of potential sequelae to maximise patient recovery.

## Next Steps

[Dale Needham, MD](#), professor of medicine at the Johns Hopkins University School of Medicine and Minxuan Huang say they plan to investigate preventive and therapeutic measures that might help such patients. They also plan to look further into the complex role of in-ICU opioid administration and dosages.

Prof. Needham noted the rapidly growing interest in mental health issues in critical care, as it expands focus on outcomes beyond 28-mortality. Johns Hopkins researchers have conducted a scoping review (Turnbull et al., in press 2016) that found 103 articles published since 2000 (versus only 11 published prior to 2000) that evaluated mental health symptoms after hospital discharge in survivors of critical illness. Prof. Needham added that it will be important to develop consensus about the best instrument(s) to use for measuring different mental health symptoms in order to reduce the large number of instruments currently being used. Their scoping review found more than 25 unique instruments used to measure mental health outcomes in the 103 papers since 2000, and this heterogeneity seriously compromises the comparability and synthesis of study findings. To understand which instruments have the best measurement properties (e.g., psychometrics) in survivors of critical illness, the team have a NIH-funded national infrastructure grant with an ongoing international consensus process in this area ([improveLTO.com](#)). The consensus process to develop the list of recommended instruments and testing methods is expected to be completed in 2017.

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Sources: [Johns Hopkins Medicine](#); email interview  
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